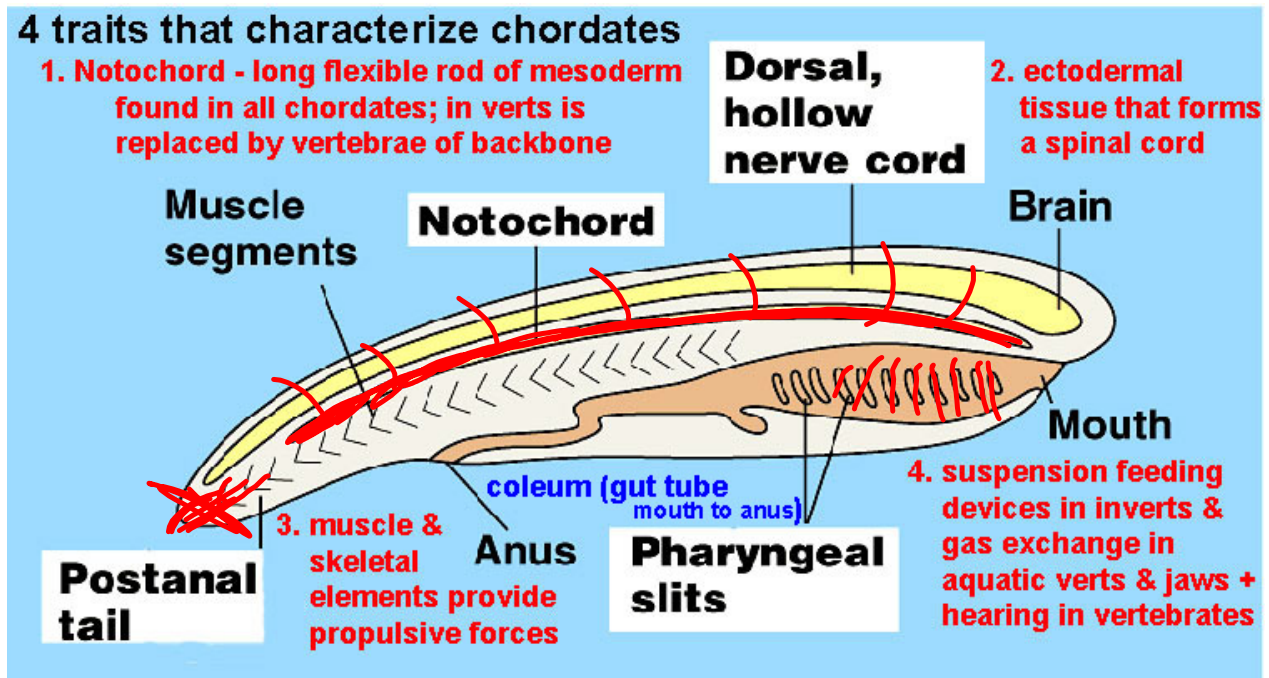


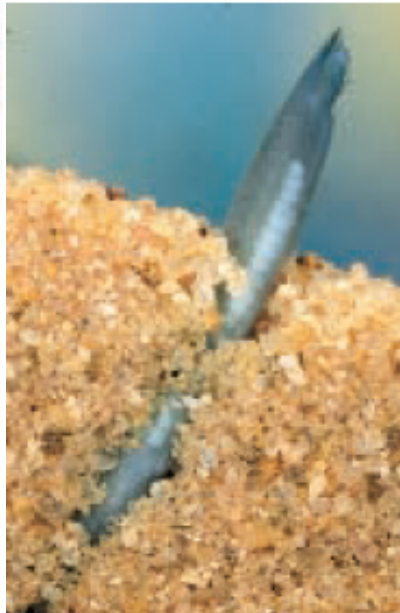
## 9. Chordates

- have a hollow dorsal nerve cord
- a notochord
- pharyngeal pouches - these become gills in fishes
- a tail that extends beyond the anus
- some of these features are only present during development of the embryo and disappear over time



- there are 5 groups vertebrates: fish, amphibians, reptiles, birds, and mammals
- there are 2 groups of non vertebrate chordates: tunicates and lancelets..see page 769/770 in text

*non vertebrate chordates*



## Chordate Evolution

- been around for more than 500 million years

some of the changes that have occurred over time include: -

the development of jaws and paired appendages

-the use of lungs

-having 4 limbs

-having an amniotic egg...has a shell/outer layer and membrane that allows it to develop out of water

- endothermy...warm-blooded (not necessarily a good thing as much energy is needed to maintain a constant temperature)

- ~~th~~ these adaptations have created similar looking yet unrelated chordates such as a birds and bats which are mammals

- ~~this~~ this was a result of these species encountering similar ecological condition as they evolved

Your Work - complete in your notebook page 771 - 832

For the 5 classes of Chordates:

- a) List the characteristics that members of that class share (usually between 2 to 4)
- b. Name the groups within each class
- c. Provide 1 or 2 characteristics of each group
- d. Provide an example for each group

Show me when you are finished and complete the final worksheet